SEQUENCE LISTING

<110> YE,\Jane et al.

PERSON ISOLATED HUMAN RAS-LIKE PROTEINS,

MICLEIC ACID MOLECULES ENCODING THESE HUMAN RAS-LIKE

PROFEINS, AND USES THEREOF

<130 CL001188

09/817,198

141> 2001-03-27

<160> 33

<170> FastSEQ for Windows Version 4.0

<210> 1 <211> 3257 <212> DNA <213> Human

<400> 1

tgcccgctgc ccgcccgcag ttcccggccc cgctggcccc agtcatggcg aagcagtacg 60 atgtgctgtt ccggctgctg ctgatcgggg actccggggt gggcaagacc tgcctgctgt 120 geogetteae egacaaegag ttecaeteet egeacatete caccateggt gttgaettta 180 agatgaagac catagaggta gacggcatca aaggtgcggat acagatctgg gacactgcag 240 ggcaggagag ataccagacc atcacaaagc agtactatcg gcgggcccag gggatatttt 300 tggtctatga cattagcagc gagcgctctt accagcacat catgaagtgg gtcagtgacg 360 tggatgagta cgcaccagaa ggcgtccaga agatccttat tgggaataag gctgatgagg 420 agcagaaacg gcaggtggga agaggcaag ggcagcagct ggcgaaggag tatggcatgg 480 acttctatga aacaagtgcc tgcaccaacc tcaacattaa agagtcattc acgcgtctga 540 cagagetggt getgeaggee cataggaagg agetggaagg ceteeggatg egtgeeagea 600 atgagttggc actggcagag ctggaggagg aggagggca\(\alpha\) acccgagggc ccagcgaact 660 cttcgaaaac ctgctggtgc tgagtcctgt gtggggcacc\ccacacgaca cccctcttcc 720 ctcaggaggc ccgtgggcag acaggggagc cggggctttg &cctgctgct gtcctctcgt 780 gtgatgaccc tattgagtat cagtagccac tactccccct gectggccct gagageggct 840 ctgctgtcat ctcaagcagc ccctgtcccc agcccgtcca ccctggagtg gtcttcttca 900 geetgtttee ceageeacag geetgetaeg acceecaega tgtgeegeaa geactgtete 960 accatecege acceaecaga caacagecag ggetggagte caggècaett teagetgete 1020 cttteteegt geategtgte tettetetge tttttetete tteceècaet tetetttete 1080 tgacccctcc cctccggtgc gtttcgtatc aaagctcctc aaaccccgtc ccccgtgtgt 1140 cctgctgtgt gcagctcgct ctttccttcc ttcctaagct atccaagggg atggacccag 1200 gctcgtgggg aggttccacc cttggatcca ggaagaaccc tccaccctgc ctcgtgggtg 1260 ggccaaaggc tacagggtgc ttetteetet teceecaeee ecaetgteee teatgtgeca 1320 tgggcctgcc tccccagtga cctgcgaaag tggagcatcg aggtaggagg\gaaacagcaa 1380 ccggggagtc ctcgagcctg gggctgccct acctctaccc attccccgac & agagctttg 1440 cccttgcttg gctgcccgcc tgcctctttg gggaactgag ctcagaggca ggtgcttcag 1500 agaaggaaac aaaatgaggg gtggcaggga taaaaagtca cctccattct ctacctccca 1560 tgcagcatga acacaatttc tctccacctg gctcccaaat ttaaagatgt gga\ccaaggc 1620 ctgtgggtac tccaggggca aggagagccc tggggtcagt gacactgtca ggccaccat 1680 gcactccaca aaggggagca tttggaaatg aaggactagc tcctatgtat caggttaaga 1740 gcaagggaga gctggccagg gacagcagtt tgcacagcag aggggaatgt agcaacagca 1800 gggcctccta ggccccatct tccatttctt aggtaagaag agcatttcct cagactcca 1860 ggcggaggac tgagcctagc cttcagcaac caaggttctc ctgggaccca aagtttatgg 1920 gagaagggca aagacttcat gggaagagag aaggaaggcc ctgggtagaa acgcttggtg 1980

```
ctqttctctt tqqcctttaa qacaaaqcqc tcatcttqcc ctctacctcc tqataqqctt 2040
gagggtttgc caaccacact gtggctacag gtggagggaa gaggactcct tcctccagag 2100
tgctatgttc aggaagtttc tttaacccca tatggcccaa gagtagctcg taggaggccc 2160
tttaaagacq gaacaagtaa tttaccagtt ctactggggt tcctgcccac cgtcccaagg 2220
tgggcgaggc ctaggaagag ggtcattctt aagccacaca ttagctgcac tgcgtggctg 2280
cagccaaaac aaagaactgg gtgttgagta ttcatcaact aagaaccaaa atccagggca 2340
ctcatatgtg aaggataaga acctcacttc cttactcctc caaaaagaag tggggaaaga 2400
accatcaaac ctttcctcct gacttaccaa accaggaaaa cagcaggaga gggtggctca 2460
ggacttaggg acagggtata gcttagatgg tggaaagcaa aggagagcag gaagttgtaa 2520
atcactggct aatgagaaaa ggagacagct aactctagga tgaagctgtg actaggctgg 2580
agttgcttcc ttgaagatgg gactccttgg gtatcaagac ctatgccaca tcacactggg 2640
gctagggaag taggtgatgc cagccctcaa gtctgtcttc agccagggac ttgagaagtt 2700
atattgggca gtggctccaa tctgtggacc agtatttcag ctttccctga agatcaggca 2760
gggtgccatt cattgtcttt ctctcctagc cccctcagga aagaaggact atatttgtac 2820
tgtaccctag gggttctgga agggaaaaca tggaatcagg attctataga ctgataggcc 2880
ctatccacaa gggccatgac tgggaaaagg tatgggagca gaaggagaat tgggatttta 2940
qqqtqcaqct acqctcaccc taaacttttq qtqqcctqqq qcatqtcttq aqqcccagac 3000
tgttaagcag getetgetgg cetgtttact egteaceace tetgeacetg etgtettgag 3060
actocatoca geoceaggea egecacetge teetgageet ceactatete cetgtgaegg 3120
gtgaacttcg tgtactgtgt ctcgggtcca tatatgaatt gtgagcaggg ttcatctatt 3180
aaaaaaaaa aaaaaaa
```



<210> 2

<211> 212

<212> PRT

<213> Human

210

RECEIVED

JUL 1 9 2002

<400> 2

Met Ala Lys Gln Tyr Asp Val Leu Phe Arg Leu Leu Leu Ile Gly Asp TECH CENTER 1600/2900 10 Ser Gly Val Gly Lys Thr Cys Leu Leu Cys Arg Phe Thr Asp Asn Glu 25 Phe His Ser Ser His Ile Ser Thr Ile Gly Val Asp Phe Lys Met Lys Thr Ile Glu Val Asp Gly Ile Lys Val Arg Ile Gln Ile Trp Asp Thr 55 Ala Gly Gln Glu Arg Tyr Gln Thr Ile Thr Lys Gln Tyr Tyr Arg Arg Ala Gln Gly Ile Phe Leu Val Tyr Asp Ile Ser Ser Glu Arg Ser Tyr 90 Gln His Ile Met Lys Trp Val Ser Asp Val Asp Glu Tyr Ala Pro Glu 105 100 110 Gly Val Gln Lys Ile Leu Ile Gly Asn Lys Ala Asp Glu Glu Gln Lys 120 Arg Gln Val Gly Arg Glu Gln Gly Gln Leu Ala Lys Glu Tyr Gly 135 Met Asp Phe Tyr Glu Thr Ser Ala Cys Thr Asn Leu Asn Ile Lys Glu 150 155 Ser Phe Thr Arg Leu Thr Glu Leu Val Leu Gln Ala His Arg Lys Glu 170 Leu Glu Gly Leu Arg Met Arg Ala Ser Asn Glu Leu Ala Leu Ala Glu 185 Leu Glu Glu Glu Gly Lys Pro Glu Gly Pro Ala Asn Ser Ser Lys 200 Thr Cys Trp Cys

<210> 3 <211> 28770 <212> DNA <213> Human

<400> 3

gctcaagatt gcacagctgg tgagtggtga cactgggact ggaacccaag tgtgccttac 60 tccagagccc ttggcatgca cctgaaaccc catgtaagcc cactgtggag acgcgcacct 120 cgaaataatg gaatccacta catcagttcc tttagctttc tgtgtaatca gagtagctag 180 caggeteggg atttegeece eeggettttt tttttttttt ttttttgagae agagttttge 240 tettgttgee caggetggag tgeaatggeg caatetegge teacegeaac ettegeetet 300 caggttcaag caattctcct gcctcagcct cccgagtagc tgggattaca ggcaccggcc 360 accacgccca gctaattttt ttatattttt agtagagatg gggtttcacc atgttggcca 420 ggctggtctt gaacttttcc cctcttatta taattcagac acttaacctg aaatatacct 480 tttcaaatga agtaaatggg cttaccactt tccttgacct actattgaaa aatacattct 540 ccatccaata ttcagcctga aaacaggtat gtacatatat acttttcatt gcttttttt 600 tttttttttt gagacaaggt ctccctctgt tgcgcaggct ggagtgcagt gtcatgatct 660 cggctcactg cagccttccc ctaatgggtt caagcaatcc tcccacctca gcctctcaag 720 cctgggatta caggcgagcc accgtgccca gctaattttt ttttattttt agtagagact 780 gggtttcact acattggcca ggctggtctc cagctcctga cctcaaagtg atctgcccgc 840 ctcagcctcc caaagtactg ggattacagg catgagccaa cgcgcctagc ctttcattgc 900 tttttaaaga cctaataggc tagactttgc tctccctcaa tactcgttgg tagggatagg 960 caattttctc aactccggag agcattcatt tgcctctctc cggtgctaac acattcagtg 1020 gtaggaaact ggatcttgaa caagggccat tcattctttg gtgccactgg ctataccaca 1080 gagaaattta ggggtctgaa acaatacatt ggtcacctgg gcacctatcc taagcacctt 1140 agagggaaaa cggagacttg cccgcacacc tctaaaggat tttgcacttg gagatgttct 1200 tatggccatc tatcttttca ccctggtgga ggccgtgaat aggcattttc cccatttaaa 1260 gaaaaaatgg ggacgggga gggccgtgac acagtcacac aggtaagggg cagccagatg 1320 gcagggaggg ggaattccac ccacactctc ggggactcat ggagacgggt gttcgaatcc 1380 agatectget caaggeette ctaceteggg tgageceage tgaggtacea gecaetgggg 1440 agcccggcca gatcctgcag atgcagggtg ccacggcggg cggaattacc ggcgccagac 1500 ttggggtggg atatggggag aagtggtgag cccggaaagc ggagcacggt agaagtgggc 1560 tgggtggggg ctcacctcaa ctcccccatt cggagcgtcc gcggaaaaac gaaaacgttc 1620 gctcgatggg gtcccgctct cctgcgcgcg ctccccgccc cctctctacc ggggcggcgg 1740 cggcggcgca ggggaagggg cgggcagggg ccgccgcgg tttctcctcc caccgcctcg 1800 cgccagccca gccgagccga gccgagccga gcgggcgccg cgccggggctc ccgccgcagc 1860 cgcgcttccc ggcacccagc gagcgagtgg gcaggcgggc gggcgaggca gccgcggggg 1920 cegggceegg egtecteete geegeeegea gegteeeegg gegggegegg geegegatgg 1980 cageggegga geagggetga geeegetgee egeeegeagt teeeggeeee getggeeeca 2040 gtcatggcga agcagtacga tgtgctgttc cggctgctgc tgatcgggga ctccggggtg 2100 ggcaagacct gcctgctgtg ccgcttcacc gacaacgagt tccactcctc gcacatctcc 2160 accateggta aggggeggtg geeeggggeg eccetecete eeegeeegeg geeeetttee 2220 ccgccgcccc cgtccccagc tggggaggaa ttgccagccc ctccggctgg aggcggtggc 2280 gccggaggcc ggagtccggg ataaatctcg gggtgagcat aggttttggc aggtgagggt 2340 gtccctgctg cctgccgtcc ggaccagggg tggggtctcc cgcctcttgc cgggaagcct 2400 tecgteceat caaacegaga aacegggggt gaggggaget ggtgtaggee tgggtacece 2460 gagctggggt agcaagaatc gtagccgctg gaataacacc cccacacccc cagggggagg 2520 ggaagtaaag cttctgctac ggaaaagggg gtcagggtgg agaccggagt cactgaggcg 2580 cccttggttc tgtggtgacc caaggtggag ccggcggggg gcgagggggg gaagagagga 2640 cgtacggagg ggccacaggg atcgagtttc cagggcagag ttgggaaggt aagccgcaag 2700 gtgggacacc tgggggagga cacagatagg gtgaggagcc cctgcgcctg ggaagaggag 2760 acatctgttc tgagggaggc taaagaggat ggaggagtgt caggaatacc tgcccagacc 2820 aaggggtcag aaggcaggca ggacccgcct gagggcatct ctcatctggc agtgctggag 2880 cctgtggtta gagggacaag acccggtggc atcccagaca gcactatgat ggggtcactt 2940

attotaggaa tgggtccatg gcctcccctc tgagacagtc agtctcccgc ttctaggctg 3000 tgaggggccc cctccctgag aagtctgagt agagggaatt tcatcctcag ctgctacccg 3060 ggtcagccct ggagtagcct ctgcattgcc caagcccctg gaaacacctg ctggctggct 3120 ggtcatccat ttggaatgct ctcctagaag tccctgctgc catcagggat gggcaccagc 3180 teteagette etettgagga tteatgteea caccatecce ecteececa acacacatte 3240 cttgctgaga gagaagtagg agcagataga tacagccagg aggaacagaa ccttctggtt 3300 aagaagccag ctttattgtc caagagacct gagacctcac tgtggggcaa agcaaccttg 3360 aatattgcct aaacttctga gctttattta gtttctcatc tgtagaacgg gtataataat 3420 tgcacctacc tgccaagttg ttgtcaagat taaatgagat aacgattgtt aagtgcttag 3480 cacagecaga cacatggtga agetegataa atgetgattg ttettaetge tattgecatt 3540° atcattgage ttttagggte teetetettt gttteaceaa ettgaagggt gaaacaacag 3600 gacttagggt cagggaacag aacttgtccg tctttctcag aggagctgta aggccaactc 3660 ttaggaaacc caggagcttg ggctgagcca tggtttggat gagagacatt gcagaaagaa 3720 gqqqaqccta taqacactaa qqctttqtqc ctqccqqqaq gacttqqqqa agaqqcaqqt 3780 gcaggagaaa ggcatgggcg tgatggagga agtggcagag gaaccagatg gtgtatgagg 3840 acaggttgtg ggctcaggga caaagggcgg tgggttatcc cttaaggaaa ctaggagtgg 3900 ctatttttgg gagaggcctg gtgcttggaa ctactgagct atctccagag agctgtgggc 3960 tgcctgggag gccctggctt tggcctgaag agctgttgtt tgcacctgct ctcctagtcc 4020 cattccaagt cctataggtg acatggactt ttccctttga gggcttcatt caaccacctc 4080 atttcagaag ctctgggact cctgcttagt gctgtgggag gcagcctccc ctgggagaca 4140 cataccetee tttttgaggg caeccetett tetaaaatae caggatggee etetgagget 4200 cgtgctctcc ttaaagagag tccattgcct cacacctcta atcatccacc cttctccttg 4260 tcccttcccc ttgtaatctc ccttcttaga caccttctgc taataggtga acactaaata 4320 ggtcacaggg acttcctgaa accctccagg gcagaccact ttgggcacat aggtgaatca 4380 gtgaactgag taggggtgtc tctgcagcac tgtctcccct caaggccctt ggtatattgg 4440 cctaaaacct aaagatggct cccagatttc ttcctccgct tctgacaccc gggttcccct 4500 ttctacagga cacagaggat tctctagggt ccccctttcc acaggacaca gaggactcta 4560 ggagtttgga ttccatggaa tagaaagaaa cctgtctttc ttcacaccag ccttttaaaa 4620 tetgeeceae tgggtatett aaatgettte ttatttaaag ettattaagg gaettgggat 4680 tctcccttat cttgggcgtg tttttcagca ttaactaaaa cttaaaggaa agagttggat 4740 ggtcaagaaa agctttttcc ttaagtgata tggacagttt ctcaaggagg tagaaggggc 4800 agccaggaga caaatcaagg agccaacgaa atgagtgcta ccaagtcata gtcattcgct 4860 tatttttaaa aaatgegtgt cetgtatgee aggetetgea etgagaeega gagatteeaa 4920 gatgaataat acctacagtc actgttctca aattgtgcat tacctaaaac acattacatg 4980 accatgctgg ccactgatcg aggcaccttt cccaggggct ttttttgtga attaagaaaa 5040 caaggtaatt caccagttat tgccaagata gtttggcttc ttggctcatg tggatatcac 5100 ctaggccagt acttttgtga tttactgtgt actccacttt aacggcctgc gatcttctag 5160 agaagaaccc gccagggagc agtgagaggc ctccctggta gactgagaca ctgactgtcc 5220 ctccccctat ccttttcgtc tttctggcca gcagaccagc aggtggccct gccactggct 5280 ctgccacagg cattteettt ctgtgcaget gtgctggeet ggctgggggt tggtgcgaag 5340 gggtccccaa aatactacct taaacaaatt aattgagcat tcactaccaa gctctgtgcc 5400 aggcatttta gagacatatt gcagtctacg ttttctgccc acagaagccc ataacctaga 5460 tggggaggca agacaaaggg aaaaacaaaa aacaaagagc tagtgccaaa atgagatatc 5520 tgaaagaact tggtgaatca ctcttcaaat gtaaaggatg gattatgatc attgcagtta 5580 ctcttaatga aggtctcaca gtgggtatca gaagctaaat tatgatgcaa gatgtaccat 5640 gaggcagccg gagaatggcg atggatggga tgggtgagtg ctattcccac gactccatgc 5700 tgtcggaggc tggggaagag agaggcccct gtggactaga accggcaggg aaggctgaag 5760 ctaggeetea gtgtgggetg etegteagtt eetgeageag aagggageag atggagtaac 5820 atgagcagag ataacagagg tgggattgag taggtgtccg tggggctcta ggcagtttag 5880 atgcaacaga agggattett caggaaagtg agaagattet tetgtttete tetetgtete 5940 ccaaattata agtgccttga tggtgcgacc aaatcttatt cctcattgtt tttatagtcc 6000 ctagtacagg gccaggcaga ttcaatgcct gttgttaaat taatgaatga atgcagggac 6060 cagttggcag agggcattga gagcctggcc aaggaggtgg aacatgagcc ttagcaatgg 6120 taggaggggt tttgagtagg gtactaatga ggttggctgg aagaaggggt taagacttga 6180 agcagggaga ctagtcaggg gctgcagtag tatcctgggc atgaaggaac ctctgaatgg 6240 cccctcaccc ccagtggtac caacaccaac ttccacacag tcagttgttc tactttccct 6300 ccagaatggg gagtggttca agccaatcaa cctggcaact tctgaaagaa tcttatggga 6360

```
cctgtgccat gaccaggtag ggagaagatg tcatacatgg acatctatgt tcaggggacc 6420
 tttgaggacc tttctgcatg gtggccagga gtgagatgat gtaaaccaca aatggaaact 6480
 taggtttcac tetgtcacce agtetggagt gtggtggtgg cacaatcacg getcactgca 6600
 gcctcgatct cctaaacgca atcctcccac ctcagcctct caagtagctg ggactacagg 6660
 tgcatgccac cacattcagc taatgtttgt acgttttgta gagatggggt ttcactatgt 6720
 tgaccagget ggtetegaac teetggaete gtgatecace ageeteagee tteeaaaatg 6780
 ctgggattat aggcgtgagc tacctcactc cctcaggagt tggttttctc cctcccatcc 6840
 ttagtcttcc ctgagtagac ctgtcaccta gtccctggac cttttgtttt gaaagccacc 6900
 ctccaggcta cactccttct gggtgaggag gagggtgatc tggttggaca ggttgggctg 6960
 ctgtggcttc agggcacttt ctcaggctgg gttgctgctg ctatgtcacc tttctcaagg 7020
 agttetgetg ggaetggett ggetgeetgt ettgaetttg ettttgaetg aggaggtggg 7080
 agatggtgag ggaggggtg gggctagatc caagcctgga atggggtgac ctaacagaca 7140
 ctggggcctg tgcttagaca ctaggatcct ggggtttgca ggtttctaga ctgagaggag 7200
 ctgggggcaa atgcagtgtg acgttgtgag agggtcaggg ctgggtctgt gtcagccttc 7260
 aggcagcctg agaccagtct ctacctactc tgttcccctg gtacctagaa aggaagggaa 7320
 ggtgagaage aatgagcaga atggaaagag cccagattaa catgcacatt tcccatggcc 7380
 ttactggccc tgtgaccttc agacactttg atgacatctt tgtgcttcgt ttctgcatct 7440
gtaaattgaa gatggtaaca gagtctttct taaaggttgt tgtgaagatt atagagccta 7500
 gcgcatataa agcacttggc agagccctcg ataaaataat agctgctatc atattatcat 7560
 cccaggctgg agtgcagtgg cacaatctcg gctcactgca acctccatct cccgggttta 7680
 agtgattete etgeeteage etectaagta getgggatta eaggeaceea ceaceacee 7740
 cggctattat tattattcct agctataaga atgctgtaga gatgaataca ctgtcagtga 7800
 gctaggaggt catcctgtgt atccatcact tgtgcactca gtcgttcagg cgctatttgc 7860
 tgaacaccaa ctacatgcca ggtgccatgc taagatttgg ggacacagtg gtgaccaaaa 7920
 cagacagaaa ccaaggagct ggcttacatt ccaagggagt gcataggaag ctgtgtttca 7980
 tttcagtttc tgctctagta ccccctttc cctggcagtg ccagggtctg agaaggaaga 8040
 ttgcctcaag gcttgggccc ctgctaggtg tcgctctgcc tcaggcctct gtttctcctc 8160
 ctgacacagg cacagactcg gcctcccacc ccttccccaa ggacatgacc ttgggaagga 8220
 acatatetga agecegegga gggttteege tgetgtgeat etgtgeeaca gateegeaga 8280
 tgcacccaca gctgggagca ccggttcctc ccgcctacct gcactccctg gtttctgttc 8340
 cttcctcctc ctccttcctt ctccccgctc cccagacagg ctggtgatga gctttataac 8400
 atgaaagctg atatttggcc attatccttc taccctgatt gccagctctt ctcagagtgc 8460
 cttcttctgt aatccaatct ttgcaccagt ttccctgtga aactgccagt tttctgtata 8520
 ggcctctgcc ctctccttgg ctcttctctc tggtcagtga gctttgtcaa ggggaacaca 8580
 gggcttcctg gacacgtaat tcctcccact gaggaggaag gggctaatca ccagccctgt 8640
 tttattttat tttattttt tgagatgaag tctagctctg tcgcccaggc tggagtgcaa 8700
 atggctcgat ctcggctcac tgcaacttct gtctcccggg ttcaagcgat tcttctgcct 8760
 cagectectg agtagetggg gattacaage atgeaceace acacetgget aattttttgt 8820
 gtttttagta gagatggggt ttcaccatgt tggccaggct ggtctcgaac ttctgacctc 8880
 agetgateca eccaectegg ecteecaaag tgetgggatt acaggagtga gecaecatgg 8940
 ctttttaaat taactgatta tggtggcatg tgcctgtagt cctaactact caggaggctg 9060
 aagtggaagg attgcttgag cccaagtagt tggaggccac agtgagctgt gatcacacca 9120
 ctgtactcca gcctgggtga cagagtgaga ccctgtctca ggaaaaaaaa aaaattactg 9180
 agaactetgt gaccatggca ccatgaacta tagaaaggge taacagttgg ctttgaaatg 9240
 tgggttatgg ctgggtgegg tggctcaege ctgtaatece ageaetttgg gaggecaagg 9300
 tgggcagatc acaaggtcag gagtttgaga ccagcccggc caacatagtg aaacctcatc 9360
 tctactaaaa atacaaaaaa ttagccgggt gttgtggcag gtgcctgtaa tcctagctac 9420
 tegggagget gaggeaggag aattgettga acceaggagg tggaggttge cacaagetga 9480
 gategeacea etgeacteea geetgggega eagageaaga etceatetea aaaacaaaaa 9540
 ttttgaaaca gagtcttgct ctgtcaccag gctggattgc agtggaggat ctcagcacac 9660
 tgccacctct gcctcccagg ttcaagtgat ttccctgcct cagcctccag agtagctggg 9720
 actacaggca cgcaccacca cgctgggcta agtttttgta ttttagtaca gaaggggttt 9780
```

```
caccatgttg gccaggatgg tctccatctc cctgacctcg tgatccgccc acctcggcct 9840
  cccaaagtgc tgggattacg ggcatgagcc accacgcccg gcctaaaagt gggttatttt 9900
  ctaattgctc ttccctgatt aaaattttct ctttgcccat cttttctcta gatatgtact 9960
  gacttcattc atccatttat tcgtctcact tgctcattca tttttgcttt catttactct 10020
  actttgttga ataatattta gtgatctacc tgctgccagg cagtgagagt ctgaagtgaa 10080
  caggatgctg ctttgccctc tgggagctta cagtgtagct gggaaccaga catccaaaca 10140
  agcagaatat tatgcaaaag aaatgtcagg atgctttgga atcacagagg agtgagaaat 10200
  ccctcccggg gaggctggtg aaggctttga agaggaagtg acatttgagt ggagtcttga 10260
  agactaggca ggatteteca ggggeeetgg gtgtggggga ageacacate etetteeetg 10320
  taggaggtgc tgtggagaac acctccagtg gggctgctac tcttcagcct tgctggggcc 10380
  agctggagtg gccacaccat ggtcacacca gctgaagttc aagaagcccc ttgccaggag 10440
  attgctttgc tggctctggg tgagggcagg tgcatctgga agcccccttc tttctaagat 10500
  gtttgctcct gagtttctat gtcctagtct tttcttccct gaaccttttg ctaccagtca 10560
  gcacagccct gcctgagaag gaggctggag gagtgagtgg tcagtagcct ggtgggtctt 10620
  ggctgcctct gtggtgcccg ctggcctaag tagcaggctt agggaggcga gacccagttc 10680
  caggggctgc caatggggag cgagatgggg tggctggagc acactgcaca tgtcaccaag 10740
  gctctaggga ggtctgtgca caaggcagtg ggaaaagcaa ggggaagacc cagcctggtc 10800
  aacatggtga aaccccgtct ctactaaaaa tacaaaaatt agctgggtgt ggtagagcac 10860
, gcctgtagtc ccagctaact tgggagcctg aggcaggaga atcactttaa cacaggaggt 10920
  ggaggttgca gtgagccgag atcgtaccac tgtactccag cctgggtgac agagtgagac 10980
  cctgtctcaa aaaaaaaaa aaaaaaaaa aaaaagtggg gaaggggaac actgatcctg 11040
  attatctact ccatatactt actatgtacc tactacctac acagggacgg tgggctttac 11100
  gcatgccatt tattcagtgt atagagatct cagcatcaca taggagcagg gagttctgaa 11160
  gttggccttg ctggcatttg agaagtttct tggtgtattc ttcaggttca cgcctccaga 11220
  caagtgtaag tgctattgaa tgctgactat gttccaggaa ctaaaccaga tgctagaaga 11280
  cacgcagtaa acagtacaga tgcaggtgca catgtgaggg tccacacaag acctgagaga 11340
  agggagggt cttgctgcag ttcccctttt gtaacaaagg agagagtact gttgaccctc 11400
  ttcctaggaa ctgtgagttt gactgaaatg tgtcctgcca caggatcttt gctgcttcct 11460
  ctacctgatt ctttggatct ccctgctggc accttcttgt catttaggtc tcagctcaaa 11520
  tgttacctcc tttaaaatgt cttctctggc cagccagtct aaggttgctt gtgcttgggg 11580
  tetecteact etetaettta teeegeagtt gettettate acatatgget etetgaaatt 11640
  aggtattcat tacttacatc tgtcttcccc actagaatta agctctgatg acaaggatct 11700
  ttctgtgctg ttcatagctt atcttctagt acctggctta gttcctggca cattgtaagc 11760
  attcaataac agtttgaatg aatgaattaa caaatgaagg aatgaatgaa tgcattttcc 11820
  tagaggactt ctgttcttcc ctgagggaag ttataggtcg tattggtttc ttgggactgt 11880
  tttttgtttg tttgttttgt tttgtttttt gagacagagt ctcactgtat cccccaggct 11940
  ggagtgcagt ggcacaatct tggctcactg caacttccgc ctcccaggtt caagcgattc 12000
  teatgeetea geeteeegag tagetgggga tteeaggage etgeeaceae gaeeagetaa 12060
  tttttgtatt tttagtagag acaaggtttc accatgttgg ccaggctggt cttgaactcc 12120-
  tgacctcagg tgacctgcct gcctctgcct cccaaagtgc tgggattaca ggcatgagcc 12180
  accaegeeg geetgttttt ttttttttt taagacagag tettgeaetg teteceagae 12240
  tggagtgcag tggtgtgatc tcagctcatt gcagcctcaa cctcctggcc tcaggtccag 12300
  gtgatectet taccteagte ttetgagtaa etgggeecae tggtatatae caccacacet 12360
  ggctaatttt taaatttttt gcagagacat ggtctcacta tgttgccctg actgatcttg 12420
  aactccttgg gttcaagtga tcctcacacc ttggcttccc aaagtgctgg gtttacaggt 12480
  gtgagccacc atgcctgggc ttgagactgt taagatgatg aggctggagg gagtggatgg 12540
  cctcactgct tgagccctag agattcctta ctccagagtg ccctggctgc agaggtggcc 12600
  ctggagggtc actccagcaa cctggctgag ctgatgggca tcatctgata ccagctctga 12660
  ccctgaataa taggcaacat ggaccttagt ctaaagcact gacccctcat ctctgcatat 12720
  accaaagaag atgagatttg ggtgaggaca cagccaaacc atatcagctc ccgggatccc 12780
  tgtgtgaatg gggtcttttt tggtgtttga gggctgcaca gggtgacctc tttagaggtg 12840
  acctcctgcc acaacccaca ggaggtgcac atggcccaca catgctggtt tcctgcagtg 12900
  ggaggggctg gggcactcct gggacctgtg cttggtaact ggagctggcc tggccctggg 12960
  gattgggtgt ctgccttggg tttcaggtgt attaggttgt tcctcgttgt ggagtctcat 13020
  tactaatgaa aagttcaggt cgcactgctg gtcctttggg ctgtggttga tcctggtgat 13080
  aacatttggc acccagaggc agccctgttt ccactgaagc atgcggagct tggctggcag 13140
  gcaggcaagc tggcagctgc ccttaaccca tgaggtgctg gcccgctagt aggcacaccc 13200
```

```
tacctgtgcc agaattgagg ttgtagccag actccaggag ccatctgggc cccacagggg 13260
gcggcatttc ctctttttgt tgaaacattc cagccaagtg ctggcttggg cttcatctct 13320
ctgtcccact ctccttcctc tccccaacat aagcctcctt ctacatccta gagctctttc 13380
cattccccct cctgcagctc tgggctcgct aatctcatgc ttccctaagg gagcttgacg 13440
qctqcttctg ctaacattta ataaagttct gcgtgccaga ccctgtgtta tgggttttac 13500
accttatctc acaatcttaa aaaaaaaatt ctctgagaat cctctgtcac ccccacttta 13560
caggtgagga aactgaggca aagataggct aactggcttc cccaacacca tgcaggtaat 13620
tagtgataaa ggcagggttg gaaccaaact tgacctccca attgtgctct taatggccag 13680
gacactetgt gtettgagee acactteete catgttttet agggetttet agggaggeag 13740
acagtgatgg gaaggggtgt tetttagtgt ggatgtgeee tgeetgetee tttetgtaag 13800
cgtcacagca cctccactgc tgtactgggg aggcaccaag tttttccctg tttgcccacc 13860
caaggegage tagettagga gteaegtgag tgetgggtgt etegeetget geatecetet 13920
atcetgeece tgeeceeggt geeeagagga gggeeetgee tgtetteeca gttetecaac 13980
agcagegetg teccageace etegggetee agttgtggee tggcagetge tggggcagae 14040
accatacaga cagagtcaca gcaggaagag gatggggccc agggctgctg cctcaggcca 14100
tggctgcatg gcaccatcag ttgattgagg agcttttctt gccaatgtct gaggcatcag 14160
gtggcaggac acgtctccct gctcttaagc ctcaggcatg cagcccttct tatgctctct 14220
ggggtgaggg ggagatcccc ctcatggaat tgctttttt ttttttttt tttttttgag 14280
acagggteet getetgteac teaggetgga gtgcageete aaceteecag acteaagtga 14340
tectectgee teageeteee gagtagetgg gaceaeaggt ggacaceate acacetgggt 14400
ttttttqttt tttqtttttt gttttctaga gatggggtct cactttcttg ctcagtctgg 14460
tetegaacte etgggegeaa geagteetee cacetegtet teecaaagtg tittggattac 14520
aggtgtgage cactgtgett ggccttttta tttatttaga atttgttttg gaattgcttc 14580
tttatgcctg gcactatgct ggcactatgt ggcagagatt ttaaaaacga gcaaacaaaa 14640
caaatgcttt gtcaaccaca aaatgtattc tctgcccctt aggttctttt tgtgtagttg 14700
aggctagaag acaaaaatag ggggcagtaa ggagcaggga gcgatggttt aggaggtctt 14760
ccttccagcc cccttgttga agcatctggc tcactagctt gggggagcca ttaggcagca 14820
qtqqccaatc ctgaggcact ctcaggtgtc actaagaaaa ggggcatgtg ctctatggat 14880
acccatgggc tgaacttgga gtctggtctg gacccatggc tgtgctagga tccaccgtcc 14940
ccagccccaa ctgcagtcag catgttcatc atccttaggc ctctccgctt ctttctgcat 15000
qtttgtctgc ctcatgccct gctcattacc aactggtcag tccccactgc cctgcctgga 15060
gtgagctggt ttgattggct tagctaagct cccttgcctc tgctggccag gtcaccctgt 15120
gggtcaccag caaacctgtt gatggtccag tctgaacctg cttctccaca aagaacatgt 15180
tgcacccage cetgettete tgageagagg tttggggetg agetgtteta gecagaaagg 15240
gacacagggt gtggcaggca ccatgatggg catatctaat gtgccgggaa aaacaatgag 15300
ctgctctccg tgctttgggc acctggttgg gagagggccc atctgtctga ctttctcctc 15360
ctggggctct cagcgtctcc gagaacctct gccagagctg tgtagaagtg gtttgcttgt 15420
ttcttaacac ttctgtgccc tatttctttc tgtacccaag aaaggaagta gactgttttg 15480
tagggacact gtcggggtga tgaatctgga cttactggaa tcatgaacca tgccaaggag 15540
gaaggagaaa ataggctatg gtgggtgtct tagttagggc tggctgctgt aacaaaatgc 15600
ctttagctga gtaatttaaa gcaagagaaa tgtattgctc agagtttggg aggctgggaa 15660
gtccaagatc agggtgccag cagattcagt gtctggtgaa ggctgatgct ctgtgacaaa 15720
ggtggcacct tctagctcca tcctcacatg gcagaagagg gaacaagctc cctcagacct 15780
cttttctaag ggcgttagtc ccatgcatga gggctctaac atcacgactg agtcacctcc 15840
caaagccctc acctcccacc agcactgcac tggggattaa gtttcaatat gggaattttg 15900
gaggaacaca gaccttcaga ccacagcagc gggcttctcc tcatgtgccc cctgcctcac 15960
ttctagatgc cgcataatgt cagtgaaacc ccgtctctac taaaaataca aaaaattagc 16020
tgggtgtggt ggcacgtgcc tgtaatccca gctacttggg aggctgaggc aggagaatcg 16080
cttgaaccca ggaggcagag gttgcagtga cctgagatcg tgccactgca ctccagcctg 16140
ggcgacagag gaagactccg tcaagaaaaa agagaaaagg catcaggtat gccagggtgt 16200
gcgggaaaag gcatcgggta tgccagggcg tgtgggaaaa ggcatcgggt atgccagggt 16260
gtgtgggaaa aggcatcggg tatgccaggg catgtgggaa aaggtggtaa gattcctcag 16320
cctcccaggg ttgggaagcc tctggccgag tgaagcatac cctgggtggg ttttaagaca 16380
ccagctttcc agtccagctc agctgtggga tgtgggaaca tgagtcagtg ggaacatgag 16440
aattggcttc cctgtggctc acaataatac ctactcctgc ctacttcatg ggacccgcat 16500
aagagctgag ggattccata gctcaggggt atgctgtaaa gacaagcact atgcacctgg 16560
gtgtggttct gaaactttct tgtgcagaag agtgagtagg gctgggcgag tcctgagaat 16620
```

```
gtgcatttct cacacacctc tgatgctgct gatgctctag tcccttggct ggcaagggta 16680
  cctggttagt aggggccagg actctgtaat gccttccact tcagggttct ctgggctggt 16740
  tttcctgact ccccaggaag cctttattca gcagagggaa ggtaggagtg agaggactac 16800
  gctgtcagtg cttcacatac atcgtttaat ttatcccagc acagccctta ggagggaagc 16860
  agtattctcc ttctacactt aagaaaatcg gcctggtgcg gaggctcatg cctataatcc 16920
  cagcactgtg ggaagctgag gcgggaggat cgctggagcc caggagttca agactagtct 16980
  gcacacttgc agtcccagct acctacccag aggctgagct gggaggattg cttgagtcct 17100
  ggaggatcga ggctgcagtg agctatgatt gctccactac actccatccc tggcaacaga 17160
  gtgagactcc atcccaaaaa aaaaaaaaaa ttgaagctag gagaagttga gacttgcctg 17220
  aagttacaca gtaagtgcca gaaccaggac ttggaccagg tctttctgac tccaggccaa 17280
  tggatgtttc ttccatgaca tatatagctc ttgaaactac ttctatctaa tatcacccac 17340
  agtgctgtta aaaatacaga tttctgggcc tcaccctcaa attatgattc agtaggtcta 17400
  ggcacgtcaa ggtcattgtt tttgtctttg ttttaagtca ccccaggtga ttctaaagcc 17460
  gaagetetge aaageacace ttgagaaaca gagaactett gtgetetege tetettgaca 17520
  cttcaggtgc aaaacttttg tcctaatgtc gttctcaaac ttacgcatgt gtgagaatca 17580
  ctgtgagagc ttattgaaac tgattgcggg accccatacc tagagggcct gattctatag 17640
  ., tttttttttt tttttgagat gaagteteae eetgtegeee agaetggagt geagtggeat 17760
  gateteaget eactgeagee tetgeeteet gggttaaage gatteteece acaccccaga 17820
  cccgctcctg agtagctggg attacaggtg cccgccacca tgactagcta acgtttgtat 17880
  ttttagtaga gacgggggtt tcaccatgtt ggccaggctg gtctcaaact cctgacctca 17940
  ggtgatccac tcacctcagc ctcccaaggt cttgggatta ctggtgtgag ccaccgcgtg 18000
  cggccagaat ttgcatttct aacaagtccc aggtgatgct gatgctgtgg gtccagggac 18060
  acactttgag aacagcttgt tactcaggcg atatgtggac agtagcgtca tcttcacctg 18120
  ggagcttcct gcagcatctc aggccttgcc ctacacctac cagatcagaa tctgcatttt 18180
  aactcaatcc ccgcgtgatt ctcatgcacc tggaagtttg agaaatatga ccttagagga 18240
  gccggaatgt gaaaccactg gaggcagaga tagatggaga atatctcttc ttctcacgga 18300
  tactaaagat gcaacaaaaa gggctgactc tctgggtgtg cacccaggtg gggctgatga 18360
  ccgaaaagag gccagatgtg gacagaggac tcttccctga gggaaggcag agagaactta 18420
  ggaaaatctg aagaaaggag gtggcttcag aggaaaggca ttcatctggg ccataaaaca 18480
  gtggagaagg tatcctgctg agagcacagg ggtggggagg gggtgccctg gagctgaagt 18540
  cttcagtggg gggacagtga taggtgaaca cacatgtgaa taaacagttt gctaagcagc 18600
  tgcgagggct ggccaaggtg agaaagcatc cgtctgcaga ggcctcaata aggccagtgt 18660
  gttgactttg tcctgcagtg ctcagcagtg gaaaaaacca acagccacgc agggagaggg 18720
  aaggagccac gatgggcacg ggttactggg gccagggctt gactggtagg tggacacagc 18780
  tgaaggccca ggttgtgtgg gaacagagcg cagaagcaat agattcctct tgaagatcct 18840
  tgggctgtta accttttta aatttaagag aggttgtgtg ggcggggagg gaggaaggaa 18900
  aatccttcag aagacataga cttactctgt ttcttccatc atatgtgaat gcatatgaat 18960
  agccaaaagg tgaataaaac acatgttccc aggtggccag tgagacctag gttgcaagat 19020
  ggtggggtgt gtgtgaggcc ggggagtgct gcgagccccg gaattcctca gccttagtcc 19080
  cccgccacat agctaagaag tgagggagga ggtgagaagg agtcactgcc cagcctcact 19140
  tccggtggag taccctgtct ccttgtcagt tctgtctctg gggacagttg cctgctttca 19200
  cetetecete cateceetet teteteacag ggaaaaatte acettaatat tggaagttee 19260
  tctcctagca aagtccttct caggcaccca caggcaaaaa ggaaactaag cagagttagg 19320
  gettecagge etagecaact acacgaetet cetettgett ceetaagaac cagegcaagg 19380
  ggcagcgtgg gttccagcat agatggacct gtgttggaat ctctgcacgt gctgtgctga 19440
  ccctggctag ccattgacct ctctgagccc ttgtttcctt tccactaggc tctctgaggg 19500
  caggggccat gtctttttca ctgctctgtc tgcactgagc actgtgcagg gcacatagga 19560
  agttcccata aatgtttgtg ggataaagga aataaaacct tctctcttcc tgtccccctt 19620
  gtgatggctt tgcacaaggc actgtccttg gccaggtttg ctaggctagt gtgaggataa 19680
  accaggtata ttacaaattg gagaaaattt ctcgttcttc ttggaagaag gtgctgtatc 19740
  atgaaacaag aatgtettga tteeetteta tgeeaggtae tggggagaaa caggtgeetg 19800
  ataaccgttg atccaggcag aaataagcat actcctgctt cccaaggcct gatgcttctc 19860
  tectteetee etteeteet eettetete actettete tgeacacatg gaagaatgge 19920
  tgccaggcat tgcccatttg gaaaagtaca gctcaatgga tatgaatcag cttgggcagg 19980
  cgagaaatga ttcacgtctg accaaatcga tttagttcag gttgcccgtt ctgcatcttt 20040
```

tttcccttgt aattaaatga tgattggtct tgatggtggg aaggaagaga cagaatttaa 20100 tttgtttgcc tttgtagaaa gctggggaca gcacagataa gggaagatgt ctcccatttg 20160 gcaaataact gatgcggagg tggagtggca gtggtgatgg ggatgctggt gccttcaggc 20220 cttctgggcc gggcagtgca gctggtggca gacggttcgg aactctacca tgttcccatc 20280 tgaaaactgt ggctgatcat gcccactcct gaccttgctc cagggagtac acaaagacgt 20340 aagettaatt aacceaceag aegtagetet tgaateeetg ggeatagtge etgggtatag 20400 ttagagttgg ggagaggcat ggtcagcaaa acaacctccc tcatctctct gttgtcactc 20460 agagtcaage tggctgctgc tggtggtgct gacttctctt gctgcagatt tctccaatat 20520 gtttctgccc tgcacgcatt tgccaaatcc cttcggtttc ttgtgtctcg tggcagctta 20580 gctcctccag cccttggatg aagaagcgtg ggaactcttt gcttcctttc cctcccgcag 20640 tgacatgcca tgccatgcca ctgcctcttc atctggtcct atgacagtca ctcataagca 20700 cccgcatgta cccggccctg cactagctca tgacagctgc agtcaattgg gccaggtgct 20760 gtateteate eggeeteete ageaaceete tgagatactg gtaatgteee tgatgaagat 20820 atttactgag gcagaaatgg acgctcagtg aagcaaggtg cctgatgtta tagcaatgag 20880 ctatgagtgg ccagagggag gagataagct caggcctgac accaaagccc atgctccttc 20940 tagtcaacca cagtgcctcc tatggtgaat gagtgagtca gcaaccaaga cgcatgaggc 21000 cttctttttg gtgagccttg gctgggtgct gaggcttcag gtacaatcat gggttggaag 21060 agccctcctc tctctccaca gtctggcact atgacccctt ctggttatta acaaggcaaa 21120 . gagagagagg gaagaaagca ggcaaataat gtgggttgct attcctagag attagaattt 21180 caggaaggat aaacacagcg ttctctccag aagtataaat aggaagactt cacacatgac 21240 tagaacgaga catgttttaa gtctgtcgag taaggcagtg atgaagtaga tttccccaga 21300 ttcactctcc ctcctctggg tcccccaggg cctttacttg tggcaacttt cagctcaggg 21360 agggaggaaa gcccctttca aagcttcaga tacttcctta aggtcagttt ctgcttaaag 21420 aaggcettta cattacttca teeetttgee aaattaaact gaaaggaaac ettteaagtg 21480 tgattgcctg gccctttcct gttcatttct cgtgggtacg ctttctaact ttctttcttt 21540 cttcctttct tcaggtgttg actttaagat gaagaccata gaggtagacg gcatcaaagt 21600 gcggatacag atctggtgag ctggggagga ggaggaggca gatgtaggag aagaggactt 21660 ctggctgctc cttagctgcc cctgccatgt gtaaaattcc taggcttcac ctgggataac 21720 tggccacctc tctgatggat ggaagcgaag tctcagaagc ccatctcttc ctataagcct 21780 taatctccaa cctctaagaa actttagggg attgactaca agcaccaaag ggcaggaatt 21840 agaaggaact ggcacactaa ccattgtgaa tttatctcag gattaggctt tgcccttggg 21900 ctgtgccaca ctatgttaag attggaagga aggaggctac acccccatc atttagggcg 21960 agaccetgag agagtteete aggatageat gatgaagttt ceaeagtage agagggtget 22020 gctgtggctc tctgcctgag gtcttggaag cactgccttt gccagggttt agagctccct 22080 ctcaattcca cagcagtatg ggcactgcct tcagaggtcc catagggact aggggtgtag 22140 cagcatecee tgecaactee catecaacea aatetggeea cagtggeeag attecagaga 22200 gctgtccaag gcctgttctg gctgtggctt ctggtttctg ccaggagggc agttggcagg 22260 aggggccaag gccctgcagg cctggtcagc accagcacag atgaccaggc ctctgactgc 22320 agatecetgt ggggatecaa geatecetgg ttttteaece tttagetece eagtttttee 22380 tacaagggga cagctctgct cttcccctcc ccgtctgttc ccatggtccc tgctcctctg 22440 agggactggc tttctcctgc agggacactg cagggcagga gagataccag accatcacaa 22500 agcagtacta tcggcgggcc caggtaagcc accacattgg gggtttcaaa gtgggaagct 22560 gccacccaca ctcccagctc tgggtatttg agatgtctgt gccacggatc ccctaaatac 22620 agttcgcctg cttggaggag cgcagggcgt ctttcagctg ttcactgatc atttgtccgt 22680 ccattgttca tggcccactc actgcaggca ggccctgcc ctcacccctg acttccaccc 22740 tccatcctgg gtcaaagatc caggtcaaag catgtggtgt cttcctgctg tagagagttc 22800 tgtgatgggc ctgggaggcg gcagtggtgg ggtctgagag aagagatatt tctggatgct 22860 gagcagggag aatgggagag tgggacccaa cctttaagtt tccacggccc cttctggccc 22920 catgactgca ctctctctgt gcatatcaca tctctctatt tctctctctc tcaggggata 22980 tttttggtct atgacattag cagcgagcgc tcttaccagc acatcatgaa gtgggtcagt 23040 gacgtggatg aggtaggaga tgccacctca ctgccggggt gtggagaggg tgcctcaccg 23100 gggaaggcaa ggcgagggcc agatgggaag gcaaatgctt ccaggaagct ttgccttcca 23160 cagccctgga tgaagacctc tgggtgagta agacatgggg aagaaaccga agctgccatg 23220 ccctcactct ctataccctg ccaggcctcc acggctgtgt ctttcccgga aatgaattag 23280 ttccaagtct tccctgtgag cagcttcttt cctgaaatct tgggaccagg tggagttgca 23340 agattgggat ctagtcctgg ctctgcacaa tagctgtgga gccttgggaa gccatttgaa 23400 tectetgggt ecceagttee tgtagaatga gggetggaet tacatecaat gteettteea 23460

```
getetgatac cagtggteta acceaaggaa geaceagtet tagecagagt gtettetace 23520
 ctaagetete eeegtgatae eettgaggte ageeatggea ettgggggag eetggeacet 23580
 gcatccagtc ggcccaccct gtccctaggg ctctggaatt ggtggtgggc tggaggcagt 23640
 qcagactctg tagggaaaat tgggggggca ggcagcactc actggctgtt ctgcccatcc 23700
 tttgtcccta gtacgcacca gaaggcgtcc agaagatcct tattgggaat aaggctgatg 23760
 aggagcagaa acggcaggtg ggaagagagc aagggcagca ggtaagtgga gggaaaaggc 23820
 aagtccaccc caggtcctct gctgggcctc cagggccagt cctgagcgtg gggacctagg 23880
 ggtgtgttcc ccagtggcag gtcctcccac acgtccccag caccccaagg ccctggggga 23940
 gtggccatcc tcggaaggct tgttgtctgg gtttcaggac agaagcccag agattcgggg 24000
 tccatccaga aacaaagacg tcataggcag caactctccc aagtccaggt ccccaaatgc 24060
 aggattgccc tctgcttaag agatcatccc cgtgttagta atgaaggact tcaagttgtc 24120
 aacctcttct ctgacagcat ccaggcctag ctgccatgtt acggtcgaga aatgatctcc 24180
 catcccaccc aacactcccc cactcctgtc cttcttaccc aggaaagagc cagggaggca 24240
 aatgaggaga caaagagcca cagctggaga agccatgggg gcagaaaggg taggaggatg 24300
 acgctgaggg aatgtccaag catgcaggga gaccatcctc ccagagagca gaaagaaata 24360
 ttqqttattt ttttttctt tctttcttt ttttttttt tttgagatgg agtctcgctc 24420
 tgtcacccag gctagagtgc agtggcgcca tctcggctca ctgcaacctc tgcctcctga 24480
 gttcaagcaa ttcttctgcc tcagcctccc aagtagctga gattacaggt gcatgccacc 24540
. acgectgget aattitititg tattittagt agagatgggg tittgecata tiggecagge 24600
 cggtctcgaa ctcctaacct caggtgatcc acctgcctca gtctcccaaa gtgctgggat 24660
 tacaggegtg agecactgtg eccagecaag attggtattt etgagataag ttatecaete 24720
 agtccgtgga cctcaagagt tttcctctcc cttttcagtc aatagcgttc cattagtact 24780
 taaaatgaaa ttgattgttt ggtataaaat ataagacatg gtcattgacc aatttgaaag 24840
 tagaggcaaa gcctactagg atagtattta ttgagcactc tatgtgtggc actgtgctaa 24900
 ggcaagcgct tttaagtgca cgaccccact gaatcatccc acaaccatgg atgggagaca 24960
 cactcagtct cctttaacag aagataaagc tggggcttac agagaatgta caacttgtcc 25020
 aaqqtcacac agctagccat cagtggcagt gctgctattc aggtctggga ctgtgggact 25080
 ccagagccca tgttttttac gaggatgcca tactgccaca atggatggtg tctttatctc 25140
 ctgatatatg attgtgtgtt gggaggcgtg gggtggcagc tggaagaatg gagaggcata 25200
 tttqtqqaqq atcttccccc attctctgct accctctctt ggagctccca gtcccatctg 25260
 agaaattatc tactctgaga aatcgtcaca acacagcatg gttgtgagtg cagtggcaga 25320
 agectgtgee tggttgtatg ggcccctccc etgeettact gactetettt cagaaatgte 25380
 cttctcttgc agctggcgaa ggagtatggc atggacttct atgaaacaag tgcctgcacc 25440
 aacctcaaca ttaaagaggt gagagccctg gtgaccaggc gcccgctctc tcgggctgag 25500
 tccagcagag gtgggaggag gagccataag atggacctta tccctcaggc cgctgcaggg 25560
 ttgccagggg agaggaggag acactggact aacctgtgcc ctttggtttc cagtcattca 25620
 cgcgtctgac agagctggtg ctgcaggccc ataggaagga gctggaaggc ctccggatgc 25680
 gtgccagcaa tgagttggca ctggcagagc tggaggagga ggagggcaaa cccgagggcc 25740
 cagcgaactc ttcgaaaacc tgctggtgct gagtcctgtg tggggcaccc cacacgacac 25800
 ccctcttccc tcaggaggcc cgtgggcaga caggggagcc ggggctttgc cctgctgctg 25860
 tectetegtg tgatgaceet attgagtate agtageeact acteceetg cetggeeetg 25920
 agageggete tgetgteate teaageagee eetgteeeca geeegteeac eetggagtgg 25980
 tcttcttcag cctgtttccc cagccacagg cctgctacga cccccacgat gtgccgcaag 26040
 cactgtetea ccatecegea cceaecagae aacageeagg getggagtee aggeeaettt 26100
 cagetgetee ttteteegtg categtgtet ettetetget ttttetetet teececaett 26160
 ctctttctct gacccctccc ctccggtgcg tttcgtatca aagctcctca aaccccgtcc 26220
 cccgtgtgtc ctgctgtgtg cagctcgctc tttccttcct tcctaagcta tccaagggga 26280
 tggacccagg ctcgtgggga ggttccaccc ttggatccag gaagaaccct ccaccctgcc 26340
 tegtgggtgg gccaaagget acagggtget tetteetett ecceacec caetgteeet 26400
 catgtgccat gggcctgcct ccccagtgac ctgcgaaagt ggagcatcga ggtaggaggg 26460
 aaacggcaac cagggagtcc tcgagcctgg ggctgcccta cctctaccca ttccccgacc 26520
 agagetttge cettgettgg etgecegeet geetetttgg ggaactgage teagaggeag 26580
 gtgcttcaga gaaggaaaca aaatgagggg tggcagggat aaaaagtcac ctccattctc 26640
 tacctcccat gcagcatgaa cacaatttct ctccacctgg ctcccaaatt taaagatgtg 26700
 gaccaaggcc tgtgggtact ccaggggcaa ggagagccct ggggtcagtg acactgtcag 26760
 gccaaccatg cactccacaa aggggagcat ttggaaatga aggactagct cctatgtatc 26820
 aggttaagag caagggagag ctggccaggg acagcagttt gcacagcaga ggggaatgta 26880
```

```
gcaacagcag ggcctcctag gccccatctt ccatttctta ggtaagaaga gcatttcctc 26940
 agacteceag geggaggaet gageetagee tteageaace aaggttetee tgggaeeeaa 27000
 agtttatggg agaagggcaa agacttcatg ggaagagaga aggaaggccc tgggtagaaa 27060
 cgcttggtgc tgttctcttt ggcctttaag acaaagcgct catcttgccc tctacctcct 27120
 gataggcttg agggtttgcc aaccacactg tggctacagg tggagggaag aggactcctt 27180
 cctccagagt gctatgttca ggaagtttct ttaaccccat atggcccaag agtagctcgt 27240
 aggaggccct ttaaagacgg aacaagtaat ttaccagttc tactggggtt cctgcccacc 27300
 gtcccaaggt gggcgaggcc taggaagagg gtcattctta agccacacat tagctgcact 27360
 gcgtggctgc agccaaaaca aagaactggg tgttgagtat tcatcaacta agaaccaaaa 27420
 tccagggcac tcatatgtga aggataagaa cctcacttcc ttactcctcc aaaaagaagt 27480
 qqqqaaaqaa ccatcaaacc tttcctcctq acttaccaaa ccaqqaaaac aqcaqqaqaq 27540
 qqtqqctcaq qacttaqqqa caqqqtataq cttaqatqqt qqaaaqcaaa qqaqaqcaqq 27600
 aagttgtaaa tcactggcta atgagaaaag gagacagcta actctaggat gaagctgtga 27660
 ctaggctgga gttgcttcct tgaagatggg actccttggg tatcaagacc tatgccacat 27720
 cacactgggg ctagggaagt aggtgatgcc agccctcaag tctgtcttca gccagggact 27780
 tgagaagtta tattgggcag tggctccaat ctgtggacca gtatttcagc tttccctgaa 27840
 gatcaggcag ggtgccattc attgtctttc tctcctagcc ccctcaggaa agaaggacta 27900
 tatttgtact gtaccctagg ggttctggaa gggaaaacat ggaatcagga ttctatagac 27960
tgataggccc tatccacaag ggccatgact gggaaaaggt atgggagcag aaggagaatt 28020
 gggattttag ggtgcagcta cgctcaccct aaacttttgg tggcctgggg catgtcttga 28080
 ggcccagact gttaaccagg ctctgctggc ctgtttactc gtcaccacct ctgcacctgc 28140
 tgtcttgaga ctccatccag ccccaggcac gccacctgct cctgagcctc cactatctcc 28200
 ctgtgacggg tgaacttcgt gtactgtgtc tcgggtccat atatgaattg tgagcagggt 28260
 tcatctattt taaacacaga tgtttacaaa ataaagatta tttcaaacca ccggtgtggc 28320
 tgcctggatg agtccttggg ggtaggtctc actcagaccc tggcagtgat gtgggaggga 28380
 gagaggcagt gctggtagaa gcagctccag aagcaaaggc aacagcagta gagtgaccac 28440
 ggaageggea aacattgtet teeettetet acetteeeta gtgecaeetg cagggaggee 28500
 caaagcaaag ccccgttgcc ctgcattggg ctggcactgc agaaataaga tgaaacacag 28560
 ttatcgagag gatgctgaac atctatgagc aggttttaaa gccaagatga gtctcatctg 28620
 tttgtgtggg tcaggaacgg gtcttcctga aggcatgagg tgggactgga taatctttca 28680
 gatttgtgat tggatacctc gggggagcag aggcagactg ggatctcagg actgcaggta 28740
 tttcatactt tgggatatgg aattgatgga
                                                                   28770
 <210> 4
 <211> 212
 <212> PRT
 <213> Rattus norvegicus
 <400>4
 Met Ala Lys Gln Tyr Asp Val Leu Phe Arg Leu Leu Leu Ile Gly Asp
                                     10
```

Ser Gly Val Gly Lys Thr Cys Leu Leu Cys Arg Phe Thr Asp Asn Glu 25 Phe His Ser Ser His Ile Ser Thr Ile Gly Val Asp Phe Lys Met Lys Thr Ile Glu Val Asp Gly Ile Lys Val Arg Ile Gln Ile Trp Asp Thr Ala Gly Gln Glu Arg Tyr Gln Thr Ile Thr Lys Gln Tyr Tyr Arg Arg 70 75 80 Ala Gln Gly Ile Phe Leu Val Tyr Asp Ile Ser Ser Glu Arg Ser Tyr 90 Gln His Ile Met Lys Trp Val Ser Asp Val Asp Glu Tyr Ala Pro Glu 105 Gly Val Gln Lys Ile Leu Ile Gly Asn Lys Ala Asp Glu Gln Lys 120 125 Arg Gln Val Gly Arg Glu Gln Gly Gln Leu Ala Lys Glu Tyr Gly 130 135 140

Met Asp Phe Tyr Glu Thr Ser Ala Cys Thr Asn Leu Asn Ile Lys Glu • 150 155 Ser Phe Thr Arg Leu Thr Glu Leu Val Leu Gln Ala His Arg Lys Glu 170 165 Leu Asp Gly Leu Arg Thr Cys Ala Ser Asn Glu Leu Ala Leu Ala Glu 185 Leu Glu Glu Asp Glu Gly Lys Thr Glu Gly Pro Ala Asn Ser Ser Lys 200 Thr Cys Trp Cys 210 <210> 5 <211> 218 <212> PRT <213> Human <400> 5 . Met Ala Lys Gln Tyr Asp Val Leu Phe Arg Leu Leu Leu Ile Gly Asp Ser Gly Val Gly Lys Thr Cys Leu Leu Cys Arg Phe Thr Asp Asn Glu 25 Phe His Ser Ser His Ile Ser Thr Ile Gly Val Asp Phe Lys Met Lys 40 Thr Ile Glu Val Asp Gly Ile Lys Val Arg Ile Gln Ile Trp Asp Thr 55 Ala Gly Gln Glu Arg Tyr Gln Thr Ile Thr Lys Gln Tyr Tyr Arg Arg 70 75 Ala Gln Gly Ile Phe Leu Val Tyr Asp Ile Ser Ser Glu Arg Ser Tyr 90 Gln His Ile Met Lys Trp Val Ser Asp Val Asp Glu Tyr Ala Pro Glu 105 Gly Val Gln Lys Ile Leu Ile Gly Asn Lys Ala Asp Glu Glu Gln Lys 120 Arg Gln Val Gly Arg Glu Gln Gly Gln Lys Cys Pro Ser Leu Gln 135 140 Leu Ala Lys Glu Tyr Gly Met Asp Phe Tyr Glu Thr Ser Ala Cys Thr 150 155 Asn Leu Asn Ile Lys Glu Ser Phe Thr Arg Leu Thr Glu Leu Val Leu 170 Gln Ala His Arg Lys Glu Leu Glu Gly Leu Arg Met Arg Ala Ser Asn 185 Glu Leu Ala Leu Ala Glu Leu Glu Glu Glu Gly Lys Pro Glu Gly 200 Pro Ala Asn Ser Ser Lys Thr Cys Trp Cys 210 215 <210> 6 <211> 4 <212> PRT <213> Homo sapien

<213> Homo sapien <400> 6 Asn Ser Ser Lys 1 <210> 7

```
<211> 4
 <212> PRT
 <213> Homo sapien
 <400> .7
 Thr Asp Asn Glu 1
 <210> 8
 <211> 4
 <212> PRT
 <213> Homo sapien
 <400> 8
 Ser Asp Val Asp 1
 <210> 9
 <211> 9
 <212> PRT
. <213> Homo sapien
 <400> 9
 Lys Trp Val Ser Asp Val Asp Glu Tyr 1
                                                       5
 <210> 10
 <211> 6
 <212> PRT
 <213> Homo sapien
 <400> 10
 Gly Val Gly Lys Thr Cys 1
                                          5
 <210> 11
 <211> 6
 <212> PRT
 <213> Homo sapien
 <400> 11
 Gly Gln Gln Leu Ala Lys 1
 <210> 12
 <211> 8
 <212> PRT
 <213> Homo sapien
 <400> 12
 Gly Asp Ser Gly Val Gly Lys Thr 1
 <210> 13
 <211> 14
 <212> PRT
 <213> Homo sapien
 <400> 13
 Leu Leu Leu Ile Gly Asp Ser Gly Val Gly Lys Thr Cys Leu 1
 <210> 14
```

5

```
<211> 506
 <212> DNA
 <213> Homo sapien
 <220>
 <221> variation
 <222> (206)...(206)
 <223> 't' may be either present or absent
 <400> 14
qctcaaqatt qcacaqctqq tqaqtqqtga cactgggact ggaacccaag tgtgccttac 60
tccagagccc ttggcatgca cctgaaaccc catgtaagcc cactgtggag acgcgcacct 120
 cgaaataatg gaatccacta catcagttcc tttagctttc tgtgtaatca gagtagctag 180
caggeteggg atttegeece ceggettttt ttttttttt tttttgagac agagttttgc 240
 tettgttgee caggetggag tgeaatggeg caatetegge teaeegeaac ettegeetet 300
caggttcaag caattctcct gcctcagcct cccgagtagc tgggattaca ggcaccggcc 360
 accacqccca gctaattttt ttatattttt agtagagatg gggtttcacc atgttggcca 420
 ggctggtctt gaacttttcc cctcttatta taattcagac acttaacctg aaatatacct 480

    tttcaaatga agtaaatggg cttacc

                                                                    506
 <210> 15
 <211> 601
 <212> DNA
 <213> Homo sapien
 <400> 15
 tattaaggga cttgggattc tcccttatct tgggcgtgtt tttcagcatt aactaaaact
 60taaaggaaag agttggatgg tcaagaaaag ctttttcctt aagtgatatg gacagtttct
 120caaggaggta gaaggggcag ccaggagaca aatcaaggag ccaacgaaat gagtgctacc
 180aagtcatagt cattcgctta tttttaaaaa atgcgtgtcc tgtatgccag gctctgcact
 240gagaccgaga gattccaaga tgaataatac ctacagtcac tgttctcaaa ttgtgcatta
 300yctaaaacac attacatgac catgctggcc actgatcgag gcacctttcc caggggcttt
 360ttttgtgaat taagaaaaca aggtaattca ccagttattg ccaagatagt ttggcttctt
 420ggctcatgtg gatatcacct aggccagtac ttttgtgatt tactgtgtac tccactttaa
 480cggcctgcga tcttctagag aagaacccgc cagggagcag tgagaggcct ccctggtaga
 540ctgagacact gactgtccct ccccctatcc ttttcgtctt tctggccagc agaccagcag
                                                                           600g
 601
 <210> 16
 <211> 601
 <212> DNA
 <213> Homo sapien
 <400> 16
 atgccaggtg ccatgctaag atttggggac acagtggtga ccaaaacaga cagaaaccaa
 60ggagetgget tacattecaa gggagtgeat aggaagetgt gttteattte agtttetget
 120ctagtacccc cctttccctg gcagtgccag ggtctgagaa ggaagagtga ggtggtgagg
 180aggtgtgaag cagtggggtg acctgagagg agaggatggg gtggctttgc ctcaaggctt
 240qqqcccctqc taqqtqtcqc tctqcctcaq qcctctqttt ctcctcctga cacaggcaca
 300ractcggcct cccaccctt ccccaaggac atgaccttgg gaaggaacat atctgaagcc
 360cgcggagggt ttccgctgct gtgcatctgt gccacagatc cgcagatgca cccacagctg
 420ggagcacegg tteeteeege etacetgeae teeetggttt etgtteette eteeteetee
 480ttccttctcc ccgctcccca gacaggctgg tgatgagctt tataacatga aagctgatat
 540ttggccatta teettetace etgattgeca getettetea gagtgeette ttetgtaate
                                                                           600c
 601
```

14

<210> 17

```
<211> 601
 <212> DNA
 <213> Homo sapien
 <400> 17
ctggtgaagg ctttgaagag gaagtgacat ttgagtggag tcttgaagac taggcaggat
60tctccagggg ccctgggtgt gggggaagca cacatcctct tccctgtagg aggtgctgtg
120qaqaacacct ccaqtqqqqc tqctactctt caqccttqct qqqqccaqct qqaqtqqcca
180caccatgqtc acaccagctq aagttcaaqa aqccccttqc caggagattq ctttqctqqc
240tctgggtgag ggcaggtgca tctggaagcc cccttctttc taagatgttt gctcctgagt
300ytetatgtee tagtetttte tteeetgaae ettttgetae eagteageae ageeetgeet
360gagaaggagg ctggaggagt gagtggtcag tagcctggtg ggtcttggct gcctctgtgg
420tgcccgctgg cctaagtagc aggcttaggg aggcgagacc cagttccagg ggctgccaat
480ggggagcgag atggggtggc tggagcacac tgcacatgtc accaaggctc tagggaggtc
540tgtgcacaag gcagtgggaa aagcaagggg aagacccagc ctggtcaaca tggtgaaacc
                                                                          600c
601
<210> 18
, <211> 601
<212> DNA
<213> Homo sapien
<400> 18
agatttgggt gaggacacag ccaaaccata tcagctcccg ggatccctgt gtgaatgggg
60tcttttttqq tqtttqaqqq ctqcacaqqq tqacctcttt aqaqqtqacc tcctqccaca
120acccacagga ggtgcacatg gcccacacat gctggtttcc tgcagtggga ggggctgggg
180cactcctggg acctgtgctt ggtaactgga gctggcctgg ccctggggat tgggtgtctg
240ccttgggttt caggtgtatt aggttgttcc tcgttgtgga gtctcattac taatgaaaag
300ytcaggtcgc actgctggtc ctttgggctg tggttgatcc tggtgataac atttggcacc
360cagaggcagc cetgtttcca etgaagcatg eggagettgg etggcaggca ggcaagetgg
420cagctgccct taacccatga ggtgctggcc cgctagtagg cacaccctac ctgtgccaga
480attgaggttg tagccagact ccaggagcca tctgggcccc acagggggcg gcatttcctc
540tttttgttga aacattccag ccaagtgctg gcttgggctt catctctctg tcccactctc
                                                                          600c
601
<210> 19
<211> 601
<212> DNA
<213> Homo sapien
<400> 19
ccctgtgtta tgggttttac accttatctc acaatcttaa aaaaaaaatt ctctgagaat
60cctctqtcac ccccacttta caqqtqaqqa aactqaqqca aaqataqqct aactqqcttc
120cccaacacca tgcaggtaat tagtgataaa ggcagggttg gaaccaaact tgacctccca
180attgtgctct taatggccag gacactctgt gtcttgagcc acacttcctc catgttttct
240agggctttct agggaggcag acagtgatgg gaaggggtgt tctttagtgt ggatgtgccc
300ygcctgctcc tttctgtaag cgtcacagca cctccactgc tgtactgggg aggcaccaag
360tttttccctg tttgcccacc caaggcgagc tagcttagga gtcacgtgag tgctgggtgt
420ctegeetget geatecetet atcetgeece tgeeceeggt geeeagagga gggeeetgee
480tgtcttccca gttctccaac agcagcgctg tcccagcacc ctcgggctcc agttgtggcc
540tggcagctgc tggggcagac accatacaga cagagtcaca gcaggaagag gatggggccc
                                                                         .600a
601
<210> 20
<211> 601
<212> DNA
<213> Homo sapien
```

```
<400> 20
ggaaggggtg ttctttagtg tggatgtgcc ctgcctgctc ctttctgtaa gcgtcacagc
60acctccactg ctgtactggg gaggcaccaa gtttttccct gtttgcccac ccaaggcgag
120ctagcttagg agtcacgtga gtgctgggtg tctcgcctgc tgcatccctc tatcctgccc
180ctgccccegg tgcccagagg agggccctgc ctgtcttccc agttctccaa cagcagcgct
240gtcccagcac cctcgggctc cagttgtggc ctggcagctg ctgggggcaga caccatacag
300mcagagtcac agcaggaaga ggatggggcc cagggctgct gcctcaggcc atggctgcat
360ggcaccatca gttgattgag gagcttttct tgccaatgtc tgaggcatca ggtggcagga
420cacgtctccc tgctcttaag cctcaggcat gcagcccttc ttatgctctc tggggtgagg
480gggagatccc cctcatggaa ttgctttttt ttttttttt ttttttttga gacagggtcc
540tgctctgtca ctcaggctgg agtgcagcct caacctccca gactcaagtg atcctcctgc
                                                                         600c
<210> 21
<211> 601
<212> DNA
<213> Homo sapien
<220>
<221> variation
<222> (301)...(301)
<223> 't' may be either present or absent
<400> 21
tetecaacag cagegetgte ceageaceet egggetecag ttgtggcetg geagetgetg 60
qqqcaqacac catacaqaca qaqtcacaqc aggaagagga tggggcccag ggctgctgcc 120
tcaggccatg gctgcatggc accatcagtt gattgaggag cttttcttgc caatgtctga 180
ggcatcaggt ggcaggacac gtctccctgc tcttaagcct caggcatgca gcccttctta 240
tgctctctqq qqtqaqqqqq aqatccccct catqqaattq ctttttttt tttttttt 300
tttttqaqac aqqqtcctqc tctqtcactc agqctqqaqt qcaqcctcaa cctcccagac 360
tcaagtgatc ctcctgcctc agcctcccga gtagctggga ccacaggtgg acaccatcac 420
acctgggttt ttttgttttt tgttttttgt tttctagaga tggggtctca ctttcttgct 480
cagtetggte tegaacteet gggegeaage agteeteeca cetegtette ceaaagtgtt 540
tggattacag gtgtgagcca ctgtgcttgg cctttttatt tatttagaat ttgttttgga 600
                                                                  601
<210> 22
<211> 601
<212> DNA
<213> Homo sapien
<400> 22
ggatgtttct tccatgacat atatagctct tgaaactact tctatctaat atcacccaca
60gtgctgttaa aaatacagat ttctgggcct caccctcaaa ttatgattca gtaggtctag
120gcacgtcaag gtcattgttt ttgtctttgt tttaagtcac cccaggtgat tctaaagccg
180aagctctgca aagcacacct tgagaaacag agaactcttg tgctctcgct ctcttgacac
240ttcaggtgca aaacttttgt cctaatgtcg ttctcaaact tacgcatgtg tgagaatcac
300ygtgagaget tattgaaact gattgeggga ceceatacet agagggeetg attetatagg
360tctgaggtaa ggcccaagaa tttgcatatt tgcatttcgt tttcttttcc tttctttct
420ttttttttt ttttqaqatq aaqtctcacc ctgtcqccca gactggagtg cagtggcatg
480atctcagctc actgcagcct ctgcctcctg ggttaaagcg attctcccca caccccagac
540ccgctcctga gtagctggga ttacaggtgc ccgccaccat gactagctaa cgtttgtatt
                                                                         600t
601
<210> 23
```

<211> 601

```
<213> Homo sapien ·
<400> 23
aggcacgtca aggtcattgt ttttgtcttt gttttaagtc accccaggtg attctaaagc
60cgaagctctg caaagcacac cttgagaaac agagaactct tgtgctctcg ctctcttgac
120acttcaggtg caaaactttt gtcctaatgt cgttctcaaa cttacgcatg tgtgagaatc
180actgtgagag cttattgaaa ctgattgcgg gaccccatac ctagagggcc tgattctata
240ggtctgaggt aaggcccaag aatttgcata tttgcatttc gttttctttt cctttctttt
300ytttttttt ttttttgaga tgaagtctca ccctgtcgcc cagactggag tgcagtggca
360tgatctcagc tcactgcagc ctctgcctcc tgggttaaag cgattctccc cacaccccag
420acccgctcct gagtagctgg gattacaggt gcccgccacc atgactagct aacgtttgta
480tttttagtag agacgggggt ttcaccatgt tggccaggct ggtctcaaac tcctgacctc
540aggtgateca eteaceteag ceteceaagg tettgggatt aetggtgtga gecacegegt
                                                                         600q
601
<210> 24
<211> 601
<212> DNA
<213> Homo sapien
<400> 24
tgcagcctct gcctcctggg ttaaagcgat tctccccaca ccccagaccc gctcctgagt
60agctgggatt acaggtgccc gccaccatga ctagctaacg tttgtatttt tagtagagac
120gggggtttca ccatgttggc caggctggtc tcaaactcct gacctcaggt gatccactca
180cctcagcctc ccaaggtctt gggattactg gtgtgagcca ccgcgtgcgg ccagaatttg
240catttctaac aagtcccagg tgatgctgat gctgtgggtc cagggacaca ctttgagaac
300hgcttgttac tcaggcgata tgtggacagt agcgtcatct tcacctggga gcttcctgca
360gcatctcagg ccttgcccta cacctaccag atcagaatct gcattttaac tcaatccccg
420cgtgattctc atqcacctqq aaqtttqaqa aatatqacct taqaqqaqcc qqaatqtgaa
480accactggag gcagagatag atggagaata tctcttcttc tcacggatac taaagatgca
540acaaaaaggg ctgactctct gggtgtgcac ccaggtgggg ctgatgaccg aaaagaggcc
                                                                         600a
601
<210> 25
<211> 601
<212> DNA
<213> Homo sapien
<400> 25
tgtgtgtgag geeggggagt getgegagee eeggaattee teageettag teeecegeea
60catagetaag aagtgaggga ggaggtgaga aggagteaet geecageete aetteeggtg
120gagtaccctg tctccttgtc agttctgtct ctggggacag ttgcctgctt tcacctctcc
180ctccatcccc tcttctctca cagggaaaaa ttcaccttaa tattggaagt tcctctccta
240gcaaagtcct tctcaggcac ccacaggcaa aaaggaaact aagcagagtt agggcttcca
300kgcctagcca actacacgac tctcctcttg cttccctaag aaccagcgca aggggcagcg
360tgggttccag catagatgga cctgtgttgg aatctctgca cgtgctgtgc tgaccctggc
420tagccattga cetetetgag ceettgttte etttecaeta ggetetetga gggcagggge
480catgtctttt tcactgctct gtctgcactg agcactgtgc agggcacata ggaagttccc
540ataaatgttt gtgggataaa ggaaataaaa ccttctctct tcctgtcccc cttgtgatgg
                                                                          600c
601
<210> 26
<211> 601
<212> DNA
```

<212> DNA

<213> Homo sapien

```
<400> 26
aaagtccttc tcaggcaccc acaggcaaaa aggaaactaa gcagagttag ggcttccagg
60cctagccaac tacacgactc teetettget teectaagaa ecagegeaag gggcagegtg
180gccattgacc tctctgagcc cttgtttcct ttccactagg ctctctgagg gcaggggcca
240tgtctttttc actgctctgt ctgcactgag cactgtgcag ggcacatagg aagttcccat
300raatgtttgt gggataaagg aaataaaacc ttctctttc ctgtccccct tgtgatggct
420attacaaatt ggagaaaatt tetegttett ettggaagaa ggtgetgtat eatgaaacaa
480gaatgtettg attecettet atgecaggta etggggagaa acaggtgeet gataacegtt
540gatccaggca gaaataagca tactcctgct tcccaaggcc tgatgcttct ctccttcctc
                                                                     600c
<210> 27
<211> 601
<212> DNA
<213> Homo sapien
<400> 27
ccttggatga agaagcgtgg gaactctttg cttcctttcc ctcccgcagt gacatgccat
60gccatgccac tgcctcttca tctggtccta tgacagtcac tcataagcac ccgcatgtac
120ccggccctgc actagctcat gacagctgca gtcaattggg ccaggtgctg tatctcatcc
180ggcctcctca gcaaccctct gagatactgg taatgtccct gatgaagata tttactgagg
240cagaaatgga cgctcagtga agcaaggtgc ctgatgttat agcaatgagc tatgagtggc
300yagagggagg agataagete aggeetgaea eeaaageeea tgeteettet agteaaceae
360agtgcctcct atggtgaatg agtgagtcag caaccaagac gcatgaggcc ttctttttgg
420tgagccttgg ctgggtgctg aggcttcagg tacaatcatg ggttggaaga gccctcctct
480ctctccacag tctggcacta tgaccccttc tggttattaa caaggcaaag agagagagg
540aagaaagcag gcaaataatg tgggttgcta ttcctagaga ttagaatttc aggaaggata
                                                                     600a
<210> 28
<211> 601
<212> DNA
<213> Homo sapien
<400> 28
ttetetgace ceteceetee ggtgegttte gtateaaage teeteaaace eegteeeeeg
60tgtgtcctgc tgtgtgcagc tcgctctttc cttccttcct aagctatcca aggggatgga
120cccaggctcg tggggaggtt ccaccettgg atccaggaag aaccetecae cetgeetegt
180gggtgggcca aaggctacag ggtgcttctt cctcttcccc cacccccact gtccctcatg
240tgccatgggc ctgcctcccc agtgacctgc gaaagtggag catcgaggta ggagggaaac
300rgcaaccagg gagteetega geetgggget geeetacete tacccattee eegaccagag
360ctttgccctt gcttggctgc ccgcctgcct ctttggggaa ctgagctcag aggcaggtgc
420ttcagagaag gaaacaaaat gaggggtggc agggataaaa agtcacctcc attctctacc
480tcccatgcag catgaacaca atttctctcc acctggctcc caaatttaaa gatgtggacc
540aaggcctgtg ggtactccag gggcaaggag agccctgggg tcagtgacac tgtcaggcca
                                                                     600a
601
<210> 29
<211> 601
<212> DNA
<213> Homo sapien
<400> 29
accectecce teeggtgegt ttegtateaa ageteeteaa acceegteee eegtgtgtee
60tgctgtgtgc agctcgctct ttccttcctt cctaagctat ccaaggggat ggacccaggc
```

120tcgtggggag gttccaccct tggatccagg aagaaccctc caccctgcct cgtgggtggg 180ccaaaggeta cagggtgett etteetette eeccaeeece aetgteeete atgtgeeatg 240ggcctgcctc.cccagtgacc tgcgaaagtg gagcatcgag gtaggaggga aacggcaacc 300rgggagteet egageetggg getgeeetae etetaeceat teecegaeea gagetttgee 360cttgcttggc tgcccgcctg cctctttggg gaactgagct cagaggcagg tgcttcagag 420aaggaaacaa aatgaggggt ggcagggata aaaagtcacc tccattctct acctcccatg 480cagcatgaac acaatttctc tccacctggc tcccaaattt aaagatgtgg accaaggcct 540gtgggtactc caggggcaag gagagccctg gggtcagtga cactgtcagg ccaaccatgc 600a 601 <210> 30 <211> 601 <212> DNA <213> Homo sapien <400> 30 gccagggact tgagaagtta tattgggcag tggctccaat ctgtggacca gtatttcagc 60tttccctgaa gatcaggcag ggtgccattc attgtctttc tctcctagcc ccctcaggaa 120agaaggacta tatttgtact gtaccctagg ggttctggaa gggaaaacat ggaatcagga 180ttctatagac tgataggccc tatccacaag ggccatgact gggaaaaggt atgggagcag 240aaggagaatt gggattttag ggtgcagcta cgctcaccct aaacttttgg tggcctgggg 300yatgtettga ggeecagaet gttaaceagg etetgetgge etgtttaete gteaceaeet 360ctgcacctgc tgtcttgaga ctccatccag ccccaggcac gccacctgct cctgagcctc 420cactatetee etgtgaeggg tgaaettegt gtaetgtgte tegggteeat atatgaattg 480tgagcagggt tcatctattt taaacacaga tgtttacaaa ataaagatta tttcaaacca 540ccggtgtggc tgcctggatg agtccttggg ggtaggtctc actcagaccc tggcagtgat 600g <210> 31 <211> 601 <212> DNA <213> Homo sapien <400> 31 ggcagtggct ccaatctgtg gaccagtatt tcagctttcc ctgaagatca ggcagggtgc 60cattcattgt ctttctctcc tagccccctc aggaaagaag gactatattt gtactgtacc 120ctaggggttc tggaagggaa aacatggaat caggattcta tagactgata ggccctatcc 180acaagggcca tgactgggaa aaggtatggg agcagaagga gaattgggat tttagggtgc 240agctacgctc accctaaact tttggtggcc tggggcatgt cttgaggccc agactgttaa 300scaggetetg etggeetgtt taetegteae eacetetgea eetgetgtet tgagaeteea 360tccagcccca ggcacgccac ctgctcctga gcctccacta tctccctgtg acgggtgaac 420ttcgtgtact gtgtctcggg tccatatatg aattgtgagc agggttcatc tattttaaac 480acagatgttt acaaaataaa gattatttca aaccaccggt gtggctgcct ggatgagtcc 600t 540ttgggggtag gtctcactca gaccctggca gtgatgtggg agggagagag gcagtgctgg 601 <210> 32 <211> 601 <212> DNA <213> Homo sapien <400> 32 etgetggeet gtttaetegt caccacetet geacetgetg tettgagaet ceatecagee 60ccaggcacgc cacctgctcc tgagcctcca ctatctccct gtgacgggtg aacttcgtgt 120actgtgtctc gggtccatat atgaattgtg agcagggttc atctatttta aacacagatg 180tttacaaaat aaagattatt tcaaaccacc ggtgtggctg cctggatgag tccttggggg 240taggteteae teagaeeetg geagtgatgt gggagggaga gaggeagtge tggtagaage

```
300rgctccagaa gcaaaggcaa cagcagtaga gtgaccacgg aagcggcaaa cattgtcttc
360ccttctctac cttccctagt gccacctgca gggaggccca aagcaaagcc ccgttgccct
420gcattgggct.ggcactgcag aaataagatg aaacacagtt atcgagagga tgctgaacat
480ctatgagcag gttttaaagc caagatgagt ctcatctgtt tgtgtgggtc aggaacgggt
540cttcctgaag gcatgaggtg ggactggata atctttcaga tttgtgattg gatacctcgg
                                                                          600g
601
<210> 33
<211> 601
<212> DNA
<213> Homo sapien
<400> 33
gcacgccacc tgctcctgag cctccactat ctccctgtga cgggtgaact tcgtgtactg
                                                                        60
tgtctcgggt ccatatatga attgtgagca gggttcatct attttaaaca cagatgttta
                                                                       120
                                                                       180
caaaataaag attatttcaa accaccggtg tggctgcctg gatgagtcct tgggggtagg
tctcactcag accetggcag tgatgtggga gggagagagg cagtgctggt agaagcaget
                                                                       240
                                                                       300
ccagaagcaa aggcaacagc agtagagtga ccacggaagc ggcaaacatt gtcttccctt
                                                                       360
stotacette cetagtgeca cetgeaggga ggeceaaage aaageeeegt tgeeetgeat
tgggctggca ctgcagaaat aagatgaaac acagttatcg agaggatgct gaacatctat
                                                                       420
gagcaggttt taaagccaag atgagtctca tctgtttgtg tgggtcagga acgggtcttc
                                                                       480
                                                                       540
ctgaaggcat gaggtgggac tggataatct ttcagatttg tgattggata cctcggggga
                                                                       600
gcagaggcag actgggatct caggactgca ggtatttcat actttgggat atggaattga
                                                                       601
```